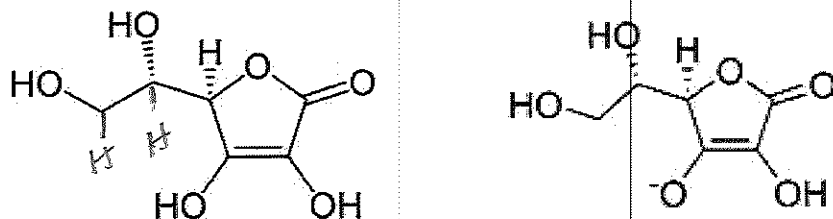


Acid Base 7min Free Response Practice Question



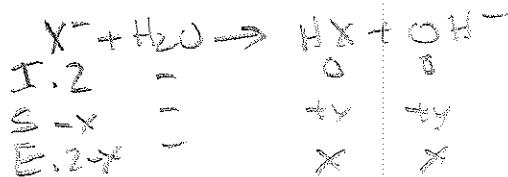
(The picture above shows ascorbic and ascorbate from left to right)

The K_a of ascorbic acid is 2.5×10^{-12} .

$$K_b = \frac{10^{-14}}{2.5 \times 10^{-12}} = 4.0 \times 10^{-3}$$

12.45

1. (2 points) Calculate the pH of a 0.2M solution of sodium ascorbate.



$$4.0 \times 10^{-3} = \frac{x^2}{0.2}$$

$$\begin{aligned}
 &14 - () \\
 &1.5 \\
 &= -\log() = \text{pOH} \\
 &x = \underline{0.28}
 \end{aligned}$$

2. 10 mL of 0.2M vitamin C, Ascorbic acid ($C_6H_8O_6$) is mixed with 5mL of 0.2M NaOH.
- a. Write the net ionic neutralization reaction taking place.



- b. Is the solution (acidic/basic/neutral)

\rightarrow 1/2 equivalence $pH = 8.5 + \log(2.5 \times 10^{-12}) = 11.6$

3. The formula of ascorbic acid is $C_6H_8O_6$. The structural formula is missing 2 Hydrogen atoms, add them in the appropriate locations.

see above